

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: LeMay, et al.

Attorney Docket No.: IGT1P078

Application No.: Not assigned

Examiner: Not assigned

Filed: January 3, 2000

Group: Not assigned

Title: GAME DEVELOPMENT
ARCHITECTURE THAT DECOUPLES THE
GAME LOGIC FROM THE GRAPHICS LOGIC

CERTIFICATE OF EXPRESS MAILING

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Mary Tran
PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Prior to prosecution on the merits, please amend the application as follows.

IN THE CLAIMS:

All pending claims have been reproduced below in an appendix A for the convenience of the Examiner. Please substitute the clean versions of claim 87. The claims in the appendix are "marked-up," showing underlining or brackets.

87. (Amended) The method of claim 86, wherein the game information is selected from the group consisting of game state information, presentation state information, configuration information, betting information, game outcome information, critical event data, I/O information and metering information.

IN THE CROSS-REFERENCE TO RELATED APPLICATIONS

Marked-up versions of the substituted paragraphs have been reproduced below in an appendix B on a separate page. The paragraphs below are "clean," having no underlining or brackets.

At page 1, 1st paragraph, lines 5-8, please substitute the paragraph at this location with the following paragraph.

This application claims priority under 35 U.S.C. §119(e) from co-pending U.S. Provisional Patent Application No. 60/325,965, filed September 28, 2001, naming LeMay, et al. as inventors, and titled "Game Development Architecture That Decouples The Game Logic From The Graphics Logic."

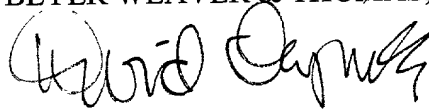
REMARKS:

In the claims and in the "cross-reference to related applications," please amend the above-identified patent application as indicated above. The claim amendments add no new matter.

CONCLUSION

Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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APPENDIX A

What is claimed is:

1. A gaming machine comprising:
 - a master gaming controller designed to generate a game of chance played on the gaming machine by executing a plurality of gaming software modules;
 - a memory device storing the plurality of gaming software modules;
 - a gaming operating system comprising logic to load and unload gaming software modules into a RAM from the memory device and control the play of the game of chance;
 - a game flow software module comprising logic to generate a game flow for the game of chance; and
 - a game presentation software module comprising logic to present the game of chance on a display screen;wherein at least the gaming operating system, the game flow software module and the game presentation software module communicate via one or more application program interfaces.
2. The gaming machine of claim 1, wherein the one or more application program interfaces are selected from the group consisting of a game flow interface, a presentation interface, a bank interface, a configuration interface and an inter process communication.
3. The gaming machine of claim 1, wherein the one or more application program interfaces are used to communicate game information.
4. The gaming machine of claim 1, wherein the game information is selected from the group consisting of game state information, presentation state information, configuration information, betting information, game outcome information, critical event data, I/O information and metering information.

5. The gaming machine of claim 1, wherein one or more of the application program interfaces is used to communicate sequence events used to control the play of the game of chance.

6. The gaming machine of claim 5, wherein the sequence events are selected from the group consisting game start, game end, stage start, stage end, process award, update display, check status of an item, synchronize presentation, state change, bet change, system meters changes, context status, game flow state, presentation substate, presentation substate complete, previous game flow state, previous presentation substate, synchronize bet, synchronize panel, synchronize play, synchronize player amount, synchronize all, money in, money out, device used to enter money and device used to pay out money.

7. The gaming machine of claim 1, wherein the game software module further comprises a game manager logical unit used to communicate with the game flow software module and the game presentation software module via the one or more application program interfaces and designed to control the play of the game of chance.

8. The gaming machine of claim 1, wherein the game of chance comprises a sequence of stages and wherein at least one stage in the sequence of stages is a game stage.

9. The gaming machine of claim 8, wherein one or more stages in the sequence of stages is a bonus game stage.

10. The gaming machine of claim 8, wherein a number of stages in the sequence of stages varies depending on an outcome of the game of chance.

11. The gaming machine of claim 1, further comprising:
a plurality of game presentation modules used to present games of chance with different themes.

12. The gaming machine of claim 11, wherein a first game of chance with a first theme is played on the gaming machine using a first game presentation module and a second game of chance with a second theme is played on the gaming machine.

13. The gaming machine of claim 12, wherein the first game of chance and the second game of chance are played using the same gaming operating system, the same game flow software module and one or more of the same application program interfaces.

14. The gaming machine of claim 13, wherein the gaming operating system loads the first game presentation module to play the first game of chance and the gaming operating system loads the second game presentation module to play the second game of chance.

15. The gaming machine of claim 1, further comprising:
a plurality of game flow software modules and game presentation modules used to present different types of games.

16. The gaming machine of claim 15, wherein the types of games are selected from card games, slot games, keno games, bingo games, dice games and pachinko games.

17. The gaming machine of claim 16, wherein a first type of game of chance is played on the gaming machine and a second type of game of chance is played on the gaming machine using the same gaming operating system.

18. The gaming machine of claim 17, wherein the first type of game of chance is played on the gaming machine and the second type of game of chance is played on the gaming machine using one or more of the same application program interfaces.

19. The gaming machine of claim 16, wherein the gaming operating system software module loads a first game flow software module and a first game presentation module to play the first type of game of chance and the gaming operating system software module loads a second game flow software module and a second game presentation module to play the second type of game of chance.

20. The gaming machine of claim 1, wherein the game of chance is selected from group consisting of slot games, poker games, pachinko games, multiple hand poker games, pai-gow poker games, black jack games, keno games, bingo games, roulette games, craps games and card games.

21. The gaming machine of claim 1, wherein the memory device is selected from a CD-ROM drive, a DVD-ROM drive, a hard drive and other mass storage devices.

22. The gaming machine of claim 1, further comprising:
a non-volatile memory device.

23. The gaming machine of claim 22, wherein the game flow software module further comprises logic for storing game data generated by the game flow software module to the non-volatile memory device.

24. The gaming machine of claim 1, wherein the game flow software module further comprises logic for generating a plurality of game states in the game flow.

25. The gaming machine of claim 24, wherein the game presentation software module comprises logic for displaying graphics and projecting sounds for each game state in the plurality of game states.

26. The gaming machine of claim 25, wherein the graphics and sounds generated by the game presentation software module for each game state are generated with data placed in NV-RAM by game flow software module.

27. The gaming machine of claim 26, wherein the data placed in NV-RAM by game flow software module is used by the game presentation software module to playback a game history.

28. The gaming machine of claim 1, wherein the game flow software module further comprises logic for configuring parameters on the gaming machine used to play the game chance associated with the game flow software module.

29. The gaming machine of claim 1, wherein the gaming operating system downloads a gaming software module from a remote file storage device.

30. The gaming machine of claim 1, wherein the gaming operating system controls the play of the game of chance on a remote gaming device.

31. The gaming machine of claim 1, wherein the gaming operating system receives gaming information used to control the play of the game of chance on the gaming machine from a remote gaming device.

32. The gaming machine of claim 1, wherein one or more of the application program interfaces is used to communicate gaming information used to control the play of the game of chance on a remote gaming device.

33. A method of playing a game of chance on a gaming machine, the method comprising:
receiving a plurality of gaming software modules for playing a game of chance on a gaming machine wherein the gaming software modules communicate with one another via one or more application program interfaces;

loading a set of gaming software modules selected from the plurality of gaming software modules into a RAM on the gaming machine wherein the set of gaming software modules comprise at least a gaming operating system that loads and unloads gaming software modules into the RAM from a memory device and controls the play of the game of chance, a game flow software module that generates the game flow for the game of chance; and a game presentation software module that presents the game of chance on a display screen on the gaming machine; and

executing the first set of gaming software modules to play a game of chance on the gaming machine.

34. The method of claim 33, wherein the one or more application program interface are selected from the group consisting of a game flow interface, a presentation interface, a bank interface, a configuration interface and an interprocess communication.

35. The method of claim 33, further comprising:
communicating game information via the one or more application program interfaces.

36. The method of claim 35, wherein the game information is selected from the group consisting of game state information, presentation state information, configuration information, betting information, game outcome information, critical event data, I/O information and metering information.

37. The method of claim 33, further comprising:
communicating sequence events used to control the play of the game of chance via the one or more application program interfaces.

38. The method of claim 33, wherein the sequence events are selected from the group consisting game start, game end, stage start, stage end, process award, update display, check status of an item, synchronize presentation, state change, bet change, system meters changes, context status, game flow state, presentation substate, presentation substate complete, previous game flow state, previous presentation substate, synchronize bet, synchronize panel, synchronize play, synchronize player amount, synchronize all, money in, money out, device used to enter money and device used to pay out money.

39. The method of claim 33, further comprising:
starting one or more stages in a sequence of stages used to play the game of chance.

40. The method of claim 39, wherein the one or more stages in the sequence of stages are selected from game stages and bonus game stages.

41. The method of claim 33, further comprising:
loading a first game presentation software module;
presenting a first game of chance using the first game presentation software module;
loading a second game presentation software module; and
presenting a second game of chance using the second game presentation software module;

wherein the same gaming operating system and the same game flow software module are used to present the first game of chance and the second game of chance.

42. The method of claim 41, wherein one or more of the same application program interfaces are used to present the first game of chance and the second game of chance.

43. The method of claim 33, further comprising:
loading a first game presentation software module and a first game flow software module;

presenting a first game of chance using the first game presentation software module and the first game flow software module;

loading a second game presentation software module and a second game flow software module; and

presenting a second game of chance using the second game presentation software module and the second game flow software module;

wherein the same gaming operating system and one or more of the same application flow interfaces are used to present the first game of chance and the second game of chance.

44. The method of claim 33, wherein the game of chance is selected from group consisting of slot games, poker games, pachinko games, multiple hand poker games, pai-gow poker games, black jack games, keno games, bingo games, roulette games, craps games and card games.

45. The method of claim 33, further comprising:
generating a plurality of game states in the game flow using the game flow software module.

46. The method of claim 45, further comprising:
displaying graphics and projecting sounds for each game state in the plurality of game states in the game flow using the game presentation software module.

47. The method of claim 45, further comprising:
displaying graphics and projecting sounds for each game state in the plurality of game states in the game flow on a remote gaming device using a game presentation software module located on the remote gaming device.

48. The method of claim 45, further comprising:
displaying sensory output for each game state in the plurality of game states in the game flow.

49. The method of claim 48, wherein the sensory output is designed to stimulate one or more of sight, hearing, touch, smell and taste senses on a game player playing the gaming machine.

50. The method of claim 33, further comprising:

storing critical game data to a non-volatile memory device using the game flow software module.

51. The method of claim 33, further comprising:
configuring the gaming machine using the game flow software module.
52. The method of claim 33, wherein the plurality of gaming software modules are received from a remote file storage device.
53. A method of generating a game flow for the play of a game of chance in a game flow software module executed from a RAM on a gaming machine, the method comprising:
receiving a request to start a game flow;
generating a plurality of game states in the game flow used to play the game of chance;
and
communicating with one or more gaming software modules via one or more application program interfaces.
54. The method of claim 53, further comprising:
loading the game flow software module into the RAM.
55. The method of claim 53, further comprising:
generating a game outcome and sending the game outcome to one or more gaming software modules via the one or more application program interfaces.
56. The method of claim 53, further comprising:
receiving a command to end the game and entering an idle state.
57. The method of claim 53, further comprising:
receiving a command to process an award and processing an award.
58. The method of claim 53, wherein the game state information is used to generate a game presentation.
59. The method of claim 53, further comprising:

communicating game state information to gaming software modules via one or more application program interfaces.

60. The method of claim 53, wherein the gaming software module is a gaming operating system software module that loads and unloads gaming software modules into the RAM from a memory device and controls the play of the game of chance.

61. The method of claim 53, wherein the gaming software module is a game presentation software module a game presentation software module that presents the game of chance on a display screen on the gaming machine.

62. The method of claim 53, wherein the one or more application program interface are selected from the group consisting of a game flow interface, a bank interface and a configuration interface.

63. The method of claim 53, further comprising:
storing critical game data in a non-volatile memory device.

64. The method of claim 53, wherein at least one of the one or more gaming software modules is located on a remote gaming device.

65. A method of generating a game presentation for the play of a game of chance in a game presentation software module executed from a RAM on a gaming machine, the method comprising:

receiving a request to start a game presentation;
receiving game state information for a game state on the gaming machine;
displaying graphics and sounds for the game state on a display screen and on audio output devices on the gaming machine;
communicating with gaming software modules via one or more application program interfaces.

66. The method of claim 65, further comprising:
reading critical game information from a non-volatile storage device.

67. The method of claim 65, further comprising:
updating metering displays on the gaming machine.
68. The method of claim 65, further comprising:
synchronizing the display of graphics with the output of sounds on the gaming machine.
69. The method of claim 65, further comprising:
sending a message acknowledge the completion of a presentation for a game state.
70. The method of claim 65, further comprising:
communicating presentation state information via one or more application program interfaces.
71. The method of claim 65, wherein the gaming software module is a gaming operating system software module that loads and unloads gaming software modules into the RAM from a memory device and controls the play of the game of chance.
72. The method of claim 65, wherein the gaming software module is a game flow software module that generates the game flow for the game of chance.
73. The method of claim 65, further comprising:
receiving game state information for a game state on a remote gaming device; and
displaying graphics and sounds for the game state on a display screen and on audio output devices on the gaming machine.
74. The method of claim 65, further comprising:
communicating with gaming software modules located on a remote gaming device via one or more application program interfaces.
75. The method of claim 74, wherein the gaming software module is a gaming operating system software module located on the remote gaming device that loads and unloads gaming software modules into the RAM from a memory device and controls the play of the game of chance.

76. The method of claim 74, wherein the gaming software module is a game flow software module located on the remote gaming device that generates the game flow for the game of chance.

77. The method of claim 65, further comprising:
communicating presentation sub-state information via one or more application program interfaces.

78. A method of generating a game of chance played on a gaming machine using a gaming operating system executed from a RAM on the gaming machine, the method comprising:
receiving a request to start the game of chance from an input device located on the gaming machine;

sending a command, via a game flow application program interface, to start the game of chance to a game flow software module that generates the game flow for the game of chance;
sending a plurality of commands to control the play of the game of chance; and
communicating with gaming software modules via one or more application program interfaces.

79. The method of claim 78, wherein the gaming software module is a game presentation software module that presents the game of chance on a display screen on the gaming machine.

80. The method of claim 79, wherein the game presentation software module is located on a remote gaming device and the game presentation software module presents the game of chance on a display screen on the remote gaming device.

81. The method of claim 78, wherein the gaming software module is a gaming device driver that communicates with a gaming device located on the gaming machine.

82. The method of claim 78, wherein the gaming device is selected from the group consisting of lights, printers, coin hoppers, bill validators, ticket readers, card readers, key pads, button panels, display screens, speakers, information panels, motors, mass storage devices and solenoids.

83. The method of claim 78, further comprising:

receiving a request to play a particular game of chance;

loading from a memory storage device a game flow software module that generates the game flow for the particular game of chance; and

loading from a memory storage device a gaming presentation software module a game presentation software module that presents the game of chance on a display screen on the gaming machine.

84. The method claim 78, further comprising:

sending a command, via an application program interface, to start a bonus game to a bonus game flow software module that generates the bonus game flow for the bonus game.

85. The method of claim 78, wherein the one or more application program interface are selected from the group consisting of a game flow interface, a presentation interface, a bank interface and a configuration interface.

86. The method of claim 78, further comprising:

communicating game information via the one or more application program interfaces.

87. (Amended) The method of claim [D7]86, wherein the game information is selected from the group consisting of game state information, presentation state information, configuration information, betting information, game outcome information, critical event data, I/O information and metering information.

88. The method of claim 78, further comprising:

receiving a game outcome from the game flow software module via at least one of the one or more application program interfaces.

89. The method of claim 78, further comprising;

sending a command to process an award to the game flow software module via the game flow application program interface.

90. The method of claim 78, further comprising:

receiving presentation state information from a game presentation software module via the one or more application program interfaces.

91. The method of claim 90,
wherein the game presentation software module is located on a remote gaming device.

92. The method of claim 78, further comprising:
sending a command to the game flow software module via the game flow application interface to end the game of chance.

93. The method of claim 78, further comprising:
storing a game history for the game of chance to a non-volatile memory device.

94. The method of claim 78, further comprising:
communicating game information to remote gaming devices.

95. The method of claim 94, wherein the remote gaming device is a player tracking server.

96. The method of claim 94, wherein the remote gaming device is a gaming machine.

97. The method of claim 78, further comprising:
loading one or more gaming software modules from a remote file storage device.

APPENDIX B

At page 1, 1st paragraph, lines 5-8, please substitute the paragraph at this location with the following paragraph.

This application claims priority under 35 U.S.C. §119(e) from co-pending U.S. Provisional Patent Application No. 60/325,965, filed September 28, 2001, naming [Rowe]LeMay, et al. as inventors, and titled "Game Development Architecture That Decouples The Game Logic From The Graphics Logic."